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pixel data may be determined as the pixel data xl in the case where the minimum correlation value L_{min} is given. Similarly, when a plurality of pixel data are applicable as the pixel data xr in the case where the minimum correlation value R_{min} is given, the average of the pixel data may be determined as the pixel data xr in the case where the minimum correlation value R_{min} is given.

(2) Description of Second Method

Fig. 4 illustrates the relationship between the correlation value L and the pixel data x. In Fig. 4, x_{min} denotes the smaller one of the pixel data d11 and d23 on the opposed pixels D11 and D23, and x_{max} denotes the larger one of the pixel data d11 and d23. xd denotes the difference $(x_{max}-x_{min})$ between the pixel data d11 and d23.

The foregoing equation (21) can be changed, as expressed by the following equations (23), from the relationship between the correlation value L and the pixel data x shown in Fig. 4.

$$L = xd + 2(x - \cancel{x_{min}}\ X_{max}) \quad (x > x_{max})$$

$$L = xd \quad (x_{min} \leqq x \leqq x_{max})$$

$$L = xd + 2(x_{min} - x) \quad (x < x_{min}) \qquad \cdots (23)$$

Although only equations for changing the correlation value L are shown, the correlation value

Hr denotes the larger one of an amount of change Hr of d13 to d15 found by the following equation (39) and an amount of change Hr2 of d21 to d23 found by the following equation (40). That is, Hr = MAX(Hr1, Hr2).

Vr denotes the smaller one of an amount of change Vr1 of d12 to d32 found by the following equation (41) and an amount of change Vr2 of d04 to d24 found by the following equation (42). That is, Vr = MIN(Vr1, Vr2).

$$Hr1 = |d13-d14| + |d14-d15| \cdots (39)$$

$$Hr2 = |d21-d22| + |d22-d23| \cdots (40)$$

$$Vr1 = |d12-d22| + |d22-d32| \cdots (41)$$

$$Vr2 = |d04-d14| + |d14-d24| \cdots (42)$$

Fig. 14 illustrates the relationship between the correlation value L and the pixel data x. In Fig. 14, x_{min} denotes the smaller one of the pixel data d12 and d24, and x_{max} denotes the larger one of the pixel data d12 and d24. Further, $xd = x_{max} - x_{min} + \beta 1 \times H1 - \beta 2 \times V1$.

When $xd = x_{max} - x_{min} + \beta 1 \times H1 - \beta 2 \times V1$, the correlation value L expressed by the foregoing equation (33) can be changed, as in the following equations (43). The correlation value R can be similarly changed:

$$L = xd + 2(x - \cancel{x_{min}})^{X_{max}} \quad (x > x_{max})$$

$$L = xd \quad (x_{min} \leqq x \leqq x_{max})$$

$$L = xd + 2(x_{min} - x) \quad (x < x_{min}) \quad \cdots (43)$$

Minimum correlation values L_{min} and R_{min} and pixel data xl and xr can be found in the method described in the second method at the step 3 shown in Fig. 2, that is, the same method as the method described using Fig. 5. In this case, xd in the graph shown in Fig. 5 indicates $x_{max} - x_{min} + \beta 1 \times H1 - \beta 2 \times V1$.

When the minimum correlation values L_{min} and R_{min} and the pixel data xl and xr in a case where the minimum correlation values are respectively given are found at the step 16, the pixel data corresponding to the smaller one of the minimum correlation values L_{min} and R_{min} is extracted (step 17).

When the minimum correlation values L_{min} and R_{min} differ from each other, one pixel data is extracted. When the minimum correlation values L_{min} and R_{min} are the same, two pixel data are extracted.

When one pixel data xl or xr is extracted at the step 17 (YES at step 18), the extracted pixel data is determined as the pixel data x on the interpolated pixel X (step 19). When two (a plurality of) pixel